

REMARKS

I. Introduction

By the present Amendment, claims 1, 4, and 13 have been amended. Claim 3 has been cancelled. Accordingly, claims 1, 2, and 4-16 remain pending in the application. Claims 1, 4, and 13 are independent.

II. Office Action Summary

In the Office Action of June 23, 2011, the Abstract was objected to because of an informality. Claims 1, 2, and 8-16 were rejected under 35 USC §103(a) as being unpatentable over U.S. Patent Application No. 2004/0158134 to Diab et al. in view of U.S. Patent No. 5,786,592 issued to Hok, and further in view of U.S. Patent No. 6,611,698 issued to Yamashita et al. ("Yamashita"). Claims 5-7 were rejected under 35 USC §103(a) as being obvious over Diab, in view of Hok and Yamashita, and further in view of WO 03/071938 to Dekker. These rejections are respectfully traversed.

III. Allowable Subject Matter

The Examiner's indication that claims 3 and 4 would be allowable, if rewritten in independent form to include all the limitations of the base claims and any intervening claims, is noted with appreciation.

By the present Amendment, Applicants have amended independent claim 1 to incorporate the subject matter previously recited in claim 3. Additionally, claim 4 has been rewritten in independent form. Accordingly, these claims are believed to be in condition for allowance.

IV. Objection to the Abstract

The Abstract was objected to because of an informality. Regarding this objection, the Office Action indicates that the Abstract contains 155 words, and that this exceeds the 150 word limit.

By the present Amendment, Applicants have revised the Abstract so that it contains less than 150 words. Withdrawal of this objection is therefore respectfully requested.

V. Rejections under 35 USC §103

Claims 1, 2, and 8-16 were rejected under 35 USC §103(a) as being unpatentable over Diab in view of Hok, and further in view of Yamashita. Regarding this rejection, the Office Action indicates that Diab discloses a pulse oximetry sensor for computing peripheral arterial oxygen saturation and hemoglobin concentration which includes most of the features recited in the claimed invention. Hok is relied upon for disclosing a pulse oximetry sensor that includes a light emitting and light detecting part containing light emitting diodes and photo detector electrically connected to a pulse oximetry instrument. Yamashita is relied upon for disclosing an optical measuring instrument for multi-channel simultaneous measurement which has an intensity of light emitted from a light source modulated at different frequencies with the light being applied to multiple positions of a test subject. The Office Action concludes that it would have been obvious to combine the teachings of Diab with those of Hok and Yamashita in order to arrive at the claimed invention.

By the present Amendment, Applicants have amended independent claim 1 to incorporate the subject matter previously recited in claim 3. This constitutes

presentation of claim 3 in independent form. As indicated in the Office Action, such an Amendment would place the claim in condition for allowance.

It is therefore respectfully submitted that independent claim 1 is allowable over the art of record.

Claims 2 and 5-12 depend from independent claim 1, and are therefore believed allowable for at least the reasons set forth above with respect to independent claim 1.

Applicants note that claims 5-12 include multiple dependencies. However, all such dependencies are either directly or indirectly based on independent claim 1, inasmuch as claim 2 depends from independent claim 1. Accordingly, these claims are still believed to be allowable over the art of record.

By the present Amendment, Applicants have amended independent claim 13 to incorporate the subject matter previously recited in claim 3. Applicants respectfully submit that independent claim 13 is now in condition for allowance.

Claims 14-16 depend from independent claim 13, and are therefore believed allowable for the reasons set forth above with respect to independent claim 13.

VI. IDS

Applicants are submitting an Information Disclosure Statement, which includes an Office Action issued by the European Patent Office in connection with a foreign counterpart of the instant application. In the Office Action, claim 3 is rejected over WO 02/063282 A1 ("D1 reference"). In this Office Action, the Examiner asserts that the D1 reference discloses the features of claim 3 at page 12, lines 12-15. The cited passage, however, merely indicates that when the contact between the probe and tissue is checked, imperfect contact appears to give a V-shaped feature at

690nm. This can be checked to see if the feature is present so that the spectrum can be rejected. The cited passage does not provide any further discussion of any aspects of the spectrum, and certainly not with respect to the center frequency. Applicants further note that the D1 reference requires repetitive measurements of the elastic scattering spectrum from 320nm to 690nm of the wavelength of the light until a good contact is detected between the probe and the tissue. This repetitiveness results in extended time requirements for obtaining the necessary measurements.

In contrast, the features of claim 3 (now incorporated in independent claim 1) specify that the intensity of the pulse wave component calculated by the pulse wave calculation unit is an intensity at the center frequency among the pulse wave component. As discussed in the Specification, once the signal components in the frequency band which contain the pulse wave components due to heartbeats have been extracted, a frequency analysis is performed so that the signal intensity $P(f)$ for the respective frequency components (f) is calculated. The frequency having the maximum signal intensity among the signal components in the frequency band is then detected and set as the center frequency (f_0). See paragraph [0038] and [0042] of the published application.

Accordingly, Applicants submit that the D1 reference fails to provide any disclosure or suggestion for the feature recited in claim 3, which is now incorporated into independent claim 1.

VII. Conclusion


For the reasons stated above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a Notice of Allowance is believed in order, and courteously solicited.

If the Examiner believes that there are any matters which can be resolved by way of either a personal or telephone interview, the Examiner is invited to contact Applicants' undersigned attorney at the number indicated below.

AUTHORIZATION

Applicants request any shortage or excess in fees in connection with the filing of this paper, including extension of time fees, and for which no other form of payment is offered, be charged or credited to Deposit Account No. 01-2135 (Case: 529.46174X00).

Respectfully submitted,
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